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ABSTRACT

During its fourteenth year, the Hartford (Connecticut) school district's Higher Horizons 100 Program (HH100), a supplementary program providing groups of 100 educationally disadvantaged students with an integrated academic, cultural, and counseling program, produced a series of substantial student gains. In all but one instance, fall to spring scores on reading and mathematics achievement tests showed gains that were statistically significant. These gain levels produced changes in relative percentile standings ranging from 5 to 36 points. In addition to achievement test gains, HH100 students produced attendance patterns substantially higher than those expected for their host school and grade. These gains ranged from 3.2% to 16.9% above projected levels. While it was not determined whether HH100 students improved their attitudes toward themselves and their schools, the attitudes themselves were highly positive. (Author/RL)

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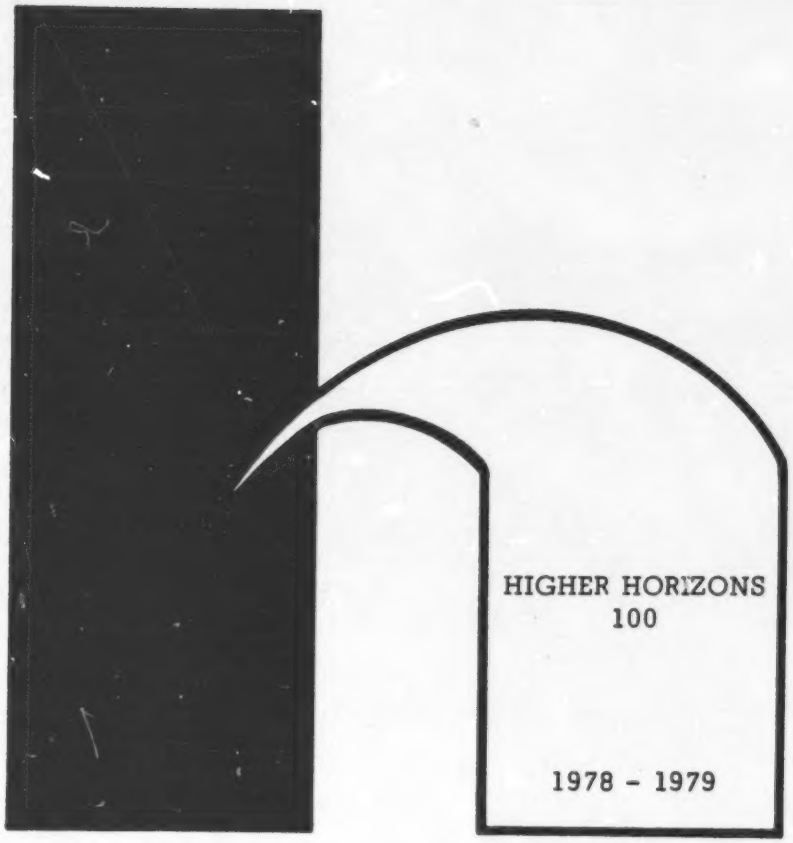

REPORT 79-9

HARTFORD MOVES AHEAD

An Evaluative Report

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HIGHER HORIZONS 100

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HIGHER HORIZONS 100

- ABSTRACT -

During its fourteenth year of operation, all eight Higher Horizons 100 teams produced a series of substantial student gains. In all but one instance, fall to spring MAT and CTBS reading and math test scores showed gains which were statistically significant at the .01 level. These same gain levels produced changes in relative percentile standings which ranged from 5 to 36 points. These gains far exceeded the minimal changes which would be expected had the supplementary HH100 services had no impact.

In addition to achievement test gains HH100 students produced attendance patterns which were substantially higher than those of their host school and grade. These gains ranged from 3.2 to 16.9 percentage points above the projected target level. While it was not possible to determine whether HH100 students had improved in attitudes towards themselves and their school, the attitudes themselves were highly positive. The program itself was again listed in a USOE publication, Educational Programs That Work.

In addition to the documentation of project successes, several problems were reported and suggestions made for clarifying staff roles, establishing student eligibility for HH100 entrance and continuation, and insuring full use of all enrollment spaces. Other suggestions consider a refinement in the evaluation design at both the local and national level.

HIGHER HORIZONS 100

1978 - 1979 Compensatory Program Evaluation

Description

From its earliest beginnings as a ninth grade demonstration center and during each of the subsequent years, Hartford's Higher Horizons 100 (HH100) program has continued to provide groups of one hundred educationally disadvantaged youngsters with an integrated academic, cultural, and counseling program. HH100 was intended to assist students to improve their basic academic skills in language and in mathematics, their self-concept, and the capability to better adjust to the school. Now in its fourteenth year of operations, HH100 has spread from one cluster in one high school to a program which annually serves some 800 secondary school students in the district's three high and two middle schools.

In its present configuration, HH100 is made up of eight clusters each of which is staffed by a team of five or six teachers, a counselor, and a project aide. In addition, one team leader received a differential for inter-team liaison services. While each cluster differs, all operate on a mini-school basis which is characterized by small classes, individualized instruction, and intensive counseling services. This organization provides HH100 with the flexibility needed for staff to plan, implement, and articulate cultural activities, field trips, and guest speakers into the total instructional process.

Program Strengths and/or Accomplishments

The project liaison team leader reported that HH100 operated substantially in accord with the funding proposal during the 1978-79 school year. The program

was further complemented by a series of team-initiated activities which had been designed to intimately involve students, parents, and staff in various phases of the program. Activities included fund raising strategies such as candy sales, plant sales, bake sales, and a Thanksgiving raffle. These were used to support field trips and other cultural activities. In addition, 3 teams received support from area businesses to underwrite the cost of the traditional end-of-year banquet. These banquets are an important part of HH100 since it is here that each student can be recognized by the teaching staff for the academic, self-concept, and adjustment gains which were made during the year. In this way, the program demonstrated what it exemplified; that each youngster can and will succeed.

There were several other program strengths reported. Each of the eight teams brought in speakers on a regular basis throughout the school year. Speakers were selected on the basis of student needs and covered topics which were not only keyed to the subjects being taught, but to school and life adjustment, future careers, future educational plans, and employment opportunities on both an entrance and up graded basis. These speakers, when coupled with a variety of extra curricular activites such as intramural sports, programs, excursions to roller skating rinks and bowling alleys, alumni receptions, and visits to New York, area colleges, businesses, and other course related sites, were not only appreciated by the youngsters but made a real impact on their learning progress as well. This impact was further supported by the fact that parents were encouraged to serve as chaperones, to participate in field trips, and to become involved through PAC and other advisory functions in actually overseeing the operations of the program. The liaison reported that part of the reason for Higher Horizons' continued

success was due in large part to this joint involvement of parent and student.

HH100 continued to garner national recognition. Because the program had been validated by USOE's Joint Dissemination and Review Panel (JDRP), it was listed in a 1979 publication entitled, Educational Programs that Work. Based on this publication, the team liaison received over 25 requests for information while team members received outside funding to present awareness sessions in Ohio, Miami and Florida and the liaison recently learned that the Charlottesville, Virginia schools now have their own HH100 program. Since HH100 is one of the few secondary programs which were listed and a new Educational Programs that Work catalogue is in preparation, once again HH100 is scheduled to appear.

Problem Areas

It was reported that several middle school problems have not as yet been resolved. At Fox Middle School one cluster paraprofessional was used in the mainstream fifty percent of the time while the counselors in both middle schools continued to service both HH100 and mainstream clusters. Further, two aide positions remain unfilled with one of these positions vacant for six months.

Evaluation

The HH100 evaluation like others in the current series attempted to answer several specific questions:

- To what extent were project objectives met?
- Were services provided in accord with the funding proposal?
- Were there other evidences of success which could be built upon?
- Were there problem areas which might be corrected?

1. To what extent were project objectives met?

The funding proposal contained three objectives together with a plan for data collection and analysis. This plan followed the HH100 model wherein reading and math skill gains were measured by fall to spring testing using the Metropolitan Achievement Tests (MAT) in grades 7-9, and the Comprehensive Test of Basic Skills (CTBS) at the 10th grade level. Objective attainments, data analysis, and tentative findings can be reported as follows.

First however, an explanation of the tables in which the data are presented is in order; table headings from left to right are described as follows.

- Teams and grade levels. MAT scores are reported by teams and subtest; i.e., Word Knowledge (WK), Reading (RD), etc. Since there are no tenth grade MAT norms, the HPHS 10th grade team used the Comprehensive Test of Basic Skills (CTBS). CTBS data are reported in a separate table.

- N refers to the number of students who had both pre and post test scores on a particular subtest. While each team provided make-up testing it is not unusual for the N to be lower than the actual team enrollment nor is it unusual for the N to differ from subtest to subtest since reading and math tests were usually given on separate days.

- Pre and post test scores are reported in standard score (SS) increments. Standard scores represent a lineal score distribution scale which enables one to equate gains at any point on the scale. Unlike grade equivalent (GE) increments, standard score gains of from 10 to 20 or from 90 to 100 represent the same relative amount of change. With the old GE system, a youngster who tested near the top of a reading test might go "up" 4 or 5 months by correctly completing only 1 or

2 questions. For another youngster who tested at the middle of the same test, completing the same additional 1 or 2 questions would probably yield no apparent score change.

- The standard deviation (SD) is a measure of score distribution or variability. The higher the SD, the more the scores are spread out. Standard deviations are used to look at the scores pre and post so as to help determine if the group scores spread out, tightened up, or remained about the same.

- The difference (Dif) between pre and post test scores is determined by subtesting the average, or mean, pretest score from the average post test score.

- To determine whether the difference between pre and post test scores has any educational meaning, a statistical technique called the t-test is used. A high t indicates that the change was a real one and not just a fluke of fate. A low t, on the other hand, says that the difference should probably be taken with a grain of salt.

- A reported significance (Sig) level is really an estimate of probability. A reported significance level of .01 means that the difference is probably real in 99 out of 100 cases, while a reported .05 level represents a probability of 95 out of 100. Either level of significance is statistical evidence that the reported change is probably real. If the change is non-significant (ns) take the change with another grain of salt.

Objective 1. Students ... will demonstrate an improvement in ... NCE scores above that which would be expected [a gain of 7%ile points or more] ... in reading and mathematics [using the CTBS or MAT].

Tables 1 - 4 show comparative fall to spring word knowledge (WK), reading (RD), arithmetic comprehension (AC), and problem solving (PS) MAT subtest scores for each team and for the HH100 program as a whole, grades 7 - 9. In all cases differences were significant at the .01 level. Note that while the California Achievement Test (CAT) was to have been used as an optional backup test for the ninth grade teams, no CAT data were presented. Note also that all figures have been rounded and may not yield one hundred percent.

TABLE 1

Comparison of Mean Metropolitan Word Knowledge Score Changes by Team, Fall 1978 - Spring 1979

Team	N	Pre WK	SD	Post WK	SD	Dif	t	Sig
HPHS-9	81	84.6	12.1	87.8	13.8	3.2	2.4	.01
WHS-9	83	83.1	6.8	85.6	6.8	2.5	4.8	.01
BHS-9	79	79.4	9.2	95.8	8.3	16.4	17.4	.01
Fox 7/8D	84	75.9	9.8	81.4	8.1	5.5	6.9	.01
Fox 7/8P	85	75.8	9.1	81.4	8.4	9.8	5.3	.01
Quirk-7	78	72.6	10.1	80.7	10.3	8.1	6.9	.01
Quirk-8	93	80.2	8.7	87.0	8.6	6.8	11.2	.01
Total	583	78.8	10.2	85.6	10.5	6.8	17.2	.01

TABLE 2

Comparison of Mean Metropolitan Reading Scores by Team,
Fall 1978 - Spring 1979

Team	N	Pre RD	SD	Post RD	SD	Dif	t	Sig
HPHS-9	81	83.7	14.6	93.6	26.5	9.9	3.8	.01
WHS-9	83	85.2	7.7	90.1	6.9	4.9	6.9	.01
BHS-9	79	81.8	10.1	86.9	10.2	5.1	6.2	.01
Fox 7/8D	84	75.6	11.4	82.3	10.7	6.7	7.7	.01
Fox 7/8P	85	73.9	9.5	83.8	7.5	9.9	12.0	.01
Quirk-7	78	77.1	7.9	82.7	6.8	5.6	9.8	.01
Quirk-8	93	83.3	9.1	90.0	8.2	6.7	8.7	.01
Total	583	80.1	11.0	87.1	13.2	7.0	15.3	.01

TABLE 3

Comparison of Mean Metropolitan Arithmetic Computation Scores by Team,
Fall 1978 - Spring 1979

Team	N	Pre AC	SD	Post AC	SD	Dif.	t	Sig.
HPHS-9	81	96.9	12.9	101.0	13.2	4.1	7.4	.01
WHS-9	83	96.4	7.7	99.3	6.4	2.9	5.5	.01
BHS-9	79	96.2	8.9	99.3	7.4	3.1	4.3	.01
Fox 7/8D	85	88.0	8.7	96.5	8.9	8.5	9.7	.01
Fox 7/8P	85	87.9	9.5	94.3	7.5	6.4	7.4	.01
Quirk-7	76	85.6	11.1	93.9	8.2	8.3	8.3	.01
Quirk-8	93	94.3	7.1	104.7	8.5	10.4	16.7	.01
Total	582	92.2	10.5	98.5	9.5	6.3	20.8	.01

TABLE 4

Comparison of Mean Metropolitan Problem Solving Scores by Team,
Fall 1978 - Spring 1979

Team	N	Pre PS	SD	Post PS	SD	Dif.	t	Sig.
HPHS-9	80	90.0	14.3	96.0	15.2	5.1	6.5	.01
WHS-9	83	82.7	16.0	93.9	8.4	11.0	6.8	.01
BHS-9	79	88.2	13.1	92.9	9.8	4.7	4.1	.01
Fox 7/8D	85	82.0	9.9	86.6	10.4	4.6	4.4	.01
Fox 7/8P	85	82.8	9.0	87.8	8.8	5.0	5.4	.01
Quirk-7	76	81.5	9.1	86.7	10.6	5.2	5.2	.01
Quirk-8	93	90.1	9.4	97.3	8.7	7.2	8.5	.01
Total	581	85.7	12.3	91.7	11.3	6.0	14.7	.01

Table 5 compares CTBS fall to spring test data for the HPHS grade 10 team. Again, all subtest gains were statistically significant at either the .01 or .05 level.

TABLE 5

Comparison of Mean HPHS-10 CTBS Score Changes by Subtest,
Fall 1978 - Spring 1979

Subtest	N	Pre Test	SD	N	Post Test	SD	Dif.	t	Sig.
WK	75	487.9	87.7	81	549.0	85.9	61.1	4.39	.01
RD	75	494.0	99.9	81	545.6	92.4	51.6	3.34	.01
AC	75	499.1	89.5	81	543.4	84.9	44.3	3.17	.01
PS	75	487.4	94.0	81	523.5	93.7	36.1	2.40	.05

While a test of statistical significance is one way to look at test score gains, another method considers changes in relative placement on a percentile band. Simply stated, HH100 is a supplementary program; it provides services above those normally provided. If HH100 is an effective supplementary program, the youngsters should make better gains than would normally be expected had the extra, or supplementary, services not been provided.

To measure percentile placement change, mean test scores are equated with a placement on a percentile band and the relative placement change assessed on a pre to post test basis. If a group evidences an improvement of 2 or more percentile points, it can be assumed that the change is greater than would normally be expected; thus the extra services probably had an impact on the youngsters. Conversely, if the change represents a 0 to 2 percentile point gain, this is the normal pattern for growth. While a minimal percentile change could mean that the youngsters are holding their own in terms of the expected norm, given the nature of any disadvantaged population, these normal gains may still represent an optimal level of improvement. Whether the 2 point gain level should be applied to HH100 has not been ascertained but should be presented for further team consideration.

Table 6 contains a comparison of pre to post relative percentile placements for each HH100 team and for the program as a whole. Note that the gains which ranged from 5 to 36 points far exceeded the projected change level.

TABLE 6

Comparison of Mean Percentile Placement Changes, Fall 1978 - Spring 1979

Team	Subtest	Pre %ile	Post %ile	Dif.
HPHS - 10				
	WK	19	28	9
	RD	22	29	7
	AC	29	44	15
	PS	11	16	5
HPHS - 9				
	WK	22	30	8
	RD	22	40	18
	AC	22	36	14
	PS	16	28	12
WHS - 9				
	WK	20	26	6
	RD	24	34	10
	AC	22	30	8
	PS	10	22	12
BHS - 9				
	WK	14	50	36
	RD	20	26	6
	AC	22	30	8
	PS	14	22	8
Fox 7/8D				
	WK	16	24	8
	RD	16	24	8
	AC	16	36	20
	PS	14	20	6
Fox 7/8P				
	WK	16	24	8
	RD	14	26	12
	AC	16	28	12
	PS	14	20	6
Quirk - 7				
	WK	18	38	20
	RD	26	40	14
	AC	40	64	24
	PS	26	38	12
Quirk - 8				
	WK	22	34	12
	RD	26	40	14
	AC	28	62	34
	PS	26	38	12
Team Average		20.0	32.1	12.1

Because the district's testing office uses the same levels and forms of the MAT on a spring to spring basis in grades 7-9, an attempt was made to determine whether there were any real differences between spring to spring and fall to spring testing.

Since compensatory program eligibility is based largely upon evidences of underachievement, spring city-wide test scores are typically used to substantiate a pupil's placement unless or until more recent test data become available. Note here that since some 219 of the grades 7 - 9 team enrollment, or about 34.7% of the total had been in HH100 more than one year, a large number of placement scores could logically be expected. Table 7 contains these comparisons of fall pre test standard scores with previous and current spring scores.

TABLE 7

Comparison of Mean Metropolitan Placement Scores with Pre and Post Scores, Spring 1978, Fall 1978, and Spring 1979

Team	Subtest	N	Place	Pre	Post	Place Pre Dif.	Place Post Dif.	Place Post t	Sig.
HPHS - 9									
	WK	20	75.9	84.6	86.0	8.7	10.1	2.3	-
	RD	19	83.8	83.7	88.1	.1	4.3	1.0	-
	AC	19	92.2	96.9	97.3	4.7	5.1	1.1	-
	PS	19	84.2	90.9	92.3	6.7	8.1	2.0	-

Team	Subtest	N	Place	Pre	Post	Place-Pre Dif.	Place-Post Dif.	Place-Post t	Sig.
WHS - 9									
	WK	82	80.2	83.1	85.5	2.9	5.3	7.6	.01
	RD	82	82.1	85.2	89.7	3.1	7.6	8.6	.01
	AC	82	96.9	96.4	99.1	.5	2.2	3.4	.01
	PS	82	89.7	82.9	94.0	6.8	4.3	4.6	.01
BHS - 9									
FOX - 7/8D									
	WK	42	75.0	75.9	84.0	.9	11.0	8.3	.01
	RD	42	78.1	75.6	86.1	2.5	8.0	7.7	.01
	AC	43	90.4	88.0	100.1	2.4	9.7	8.3	.01
	PS	43	80.7	82.0	91.5	1.3	10.8	7.5	.01
FOX - 7/8P									
	WK	12	78.8	75.8	89.7	4.0	9.9	5.6	-
	RD	12	82.3	73.9	92.3	8.4	10.0	5.7	-
	AC	12	89.3	87.9	99.7	1.4	10.4	5.0	-
	PS	12	87.7	82.8	95.1	4.9	7.4	3.8	-
QUIRK - 7									
	WK	43	73.3	72.6	82.1	.7	8.8	9.7	.01
	RD	43	77.0	77.1	83.8	.1	6.8	7.8	.01
	AC	43	85.9	85.6	94.7	.3	8.8	8.9	.01
	PS	43	81.8	81.5	89.7	.3	7.9	7.1	.01
QUIRK - 8									

While the comparisons of placement, pre, and post test data were not controlled by test level even these non-statistical comparisons point out a number of similarities between placement and pre test scores. Since team and subtest scores seemed comparable had the placement test been used as the pre test, in all probability the same level of gain would have been reported. Note that where numbers were sufficient to run a t-test, all placement to post test gains were statistically significant at the .01 level, repeating in essence the patterns reported in Tables 1 to 4.

Despite the placement and pre test comparability, there were a few exceptions: on the word knowledge test at WHS - 9 and at Fox - 7/8D; on the reading test at Fox - 7/8P; and in problem solving at HPHS - 9 and WHS - 9. With the exception of the WHS - 9 decrease in problem solving and the decrease in problem solving, word knowledge, and reading scores at Fox - 7/8P placement to pre test comparisons were generally positive with but negligible indications of negative change.

For HH100 it would appear that since test scores do not drop substantially over the summer, the spring test level may hold some validity as an indicator of a student's fall instructional level. At the very least this possibility should receive some consideration from the teams.

Objective 2. Students ... will achieve ... a better percentage of attendance ... than that of the whole school.

Because a static percentage criterion worked against the teams and schools where good attendance had been stressed, a variable attendance criterion was developed. This criterion can be reported as follows.

TABLE 8

Attendance Criterion by Percentage

Host School Attendance	Desired Gain
70 - 75%	6%
76 - 80%	5%
81 - 85%	4%
86 - 90%	3%

Given this variable criterion, team percentages of attendance were compared with those of the host school. Since current end-of-year percentages were not yet available, two criterion were used; the percentage of school attendance for 1977-78 and for January 1979 by school and by grade. These comparisons can be shown as follows. Note that in all cases gains substantially exceeded the established goal. In fact, these gains which are actually comparative improvements were so much better than the host school attendance criterion that changes in the desired rate of gain might well be considered by the teams.

TABLE 9

Comparison of HH100 Attendance Percentages
with School and Grade Criterion, 1977 - 78 and January 1979

Team	HH100	Host School 77-78	Desired Gain 77-78	Host School 79	Desired Gain 79	Gain Dif. 77-78	Gain Dif. 79
HPHS-10	93.2	76.7	5	75.0	6	+16.5	+18.2
HPHS-9	95.1	73.6	6	74.3	6	+21.5	+22.9
WHS-9	97.2	75.8	6	76.3	5	+21.4	+20.9
BHS-9	93.7	81.8	4	73.9	6	+11.9	+19.8
Fox 7/8D	93.4	87.2	3	86.8	3	+ 6.2	+ 6.6
Fox 7/8P	95.4	87.2	3	86.8	3	+ 8.2	+ 8.6
Quirk-7	93.8	84.1	4	81.6	4	+ 9.7	+12.2
Quirk-8	95.8	84.4	4	82.3	4	+11.4	+13.5
Total	94.7	81.4	6	79.6	5	+13.3	+15.1

Objective 3. Students ... will acquire a more realistic and positive attitude toward themselves and school...

As written, the cited objective seems to indicate that HH100 services will improve attitudes over the level which was in evidence at the beginning of the program year. Thus, some sort of baseline and subsequent measurement was assumed in the objective. Even so, based on previous expereinces with attitudinal measures, in 1971 it was decided to administer the Pupil Rating Form at the end of the school year only.

The Pupil Rating Form (PRF) contained three distinct areas of concern. The first section asked the student to provide a self-rating in 15 areas where HH100 may have helped during the school year. The second section asked the

youngsters to assess their personal and scholastic growth; in class, following through on assignments, and getting along with other youngsters. The third area contained four open-ended questions. Here the student was asked what part of HH100 provided the most and least help and what was liked best and disliked most. Because the questionnaires were completed anonymously, data were aggregated for the program as a whole.

While the interpretation of any self-rating scale data is at best an "iffy" business the ratings were generally salutary. Further, the ratings and for that matter the responses to the open-ended questions seemed to reinforce the overall goals of the program; to improve skills and attitudes toward school and towards others. Note that while no comparison between pre and post response patterns was possible the data do indicate that HH100 was perceived as having helped in a majority of the areas which were queried. Even so, some areas received less of a positive rating than did others; help in working out your personal problems, increasing parental interest in the school, not disturbing others in the classroom when they are working, being able to explain ideas to others easily, and taking part in class discussions. A detailed analysis of these responses is contained in Table 10.

TABLE 10

Analysis of HH100 Program Rating Form Responses, Spring 1979

	Much	Some	None	Some Adverse Effects	Cannot Judge	N
Do you think Higher Horizons has helped you so far this year to:						
1. Improve your reading ability?		4.4				686
2. Improve your study habits?		4.2				687
3. Improve your attitude toward learning?	4.5					685
4. Improve your classroom behavior?		4.2				687
5. Improve your out-of-class behavior?		4.1				685
6. Improve your getting along with your teachers?		4.2				686
7. Learn more about yourself?		4.2				684
8. Get specific help with your school work.		4.1				686
9. Get help in working out your personal problems?		3.5				686
10. Work toward a high school diploma?		4.3				682
11. Look forward to an education training beyond high school?		4.3				685
12. Identify some talents and interests which are other than academic?		4.0				681
13. Expect to achieve at a higher level in school?		4.4				683
Do you think Higher Horizons has:						
14. Increased your parents' interest in your school?		4.0				682
15. Improved your parents' interest in your school work?		4.2				685

How would you rate yourself?	All the time	Most of the time	Only some times	Never	Cannot Judge	
16. I do my homework.	____	4.1	____	____	____	687
17. I do not disturb others in the class when they are working.	____	3.7	____	____	____	686

	All the time	Most of the time	Only some times	Never	Cannot Judge	N
18. I can easily explain my ideas to others.	____	3.7	____	____	____	686
19. I take part in class discussions.	____	3.8	____	____	____	686
20. I want to learn and to improve myself.	4.6	____	____	____	____	683
21. When I come to school I am ready for the lesson and the tests of the day.	____	4.0	____	____	____	685
22. I feel I am doing better in classwork.	____	4.2	____	____	____	683
23. I get along with the other students in my class.	____	4.4	____	____	____	684
24. I finish my work on time.	____	4.0	____	____	____	682
25. I have confidence in myself.	____	4.4	____	____	____	682
26. I do the very best I can.	____	4.4	____	____	____	683
27. I do my work without having to be told to do it.	____	4.1	____	____	____	682

The responses to the four open-ended questions were equally salutary with the responses generally falling into patterns in keeping with HH100 goals. A summary of the major response areas by question follows:

1. What part of Higher Horizons do you think has helped you most?

   Students listed specific subject areas (90%). Of these, reading (30%), English (19%), and Algebra (18%) headed the list. Next in importance were areas relating to the teachers and the teaching process (2%). All other responses were scattered and were

not amenable to simple classification. Even so, the number of responses (650) which included items such as nothing, everything, etc. approximated the total number of PRF forms (687) received, with responses counting for 94.6% of that total.

2. What do you like the most about the Higher Horizons program?

As could be expected, a majority of the responses centered around teachers, teaching techniques, special help, and teachers support (11.1%). A second area covered classroom subjects (7%) with reading, English, and math taking precedence in that order. The third area of common concern considered personal and interpersonal improvements (2.6%). Again, all other concerns were scattered.

3. What did you like least about the Higher Horizons 100 program?

While responses ran a gamut from lunches to tests, the initial 97 response categories could be classified into several general areas. As could be expected, areas liked least were the subjects (27%), homework (19%), and teachers (16%). Students also reported that there were no or not enough trips (13%), that there was too much work or that the work was hard (7%), and that the rules and discipline (7%) and program location (7%) was not to their liking.

4. What suggestions could you make to improve Higher Horizons?

While student responses to the preceding three questions were amenable to various kinds of classification, this pattern did not follow for the suggestions. Although 369 comments were

obtained from the questionnaire, these covered fully 27 suggestion categories ranging from a high of 27% for no suggestions, through outdoor activities (15%), self-motivation (9%), to singular suggestions such as Mickey Mouse watches, change in the hours, and donations for mirrors in the bathrooms. Because suggestions were extremely brief, and were being reviewed by an evaluator somewhat out of context with the regular program, the impact or the validity of the suggestions as a group could not be determined. They did, however, make interesting reading.

2. Were services provided in accord with the funding proposal?

On the basis of the team liaison's report and an analysis of pupil eligibility and other data it appeared that HH100 operations substantially followed the funding proposal. There were, however, some deviations. While staffing problems have already been cited, several other areas deserve some attention.

With reference to pupil eligibility, funding guidelines require that services be provided to the most educationally disadvantaged youngsters. Generally speaking, this means that one evidence of educational disadvantagement is a youngster's placement at or below the 23rd %ile on a standardized achievement test prior to entering the program. Once enrolled, continued placement eligibility can be substantiated by placement at or below the 35th %ile for continuation in a subsequent program increment, cycle, or project year. Given this dual eligibility criterion - 23rd %ile for entrance and 35th %ile for continuance - the description of the Higher Horizons program needs a point of clarification. As originally written, the program covered a one-year period; subsequently,

increasing numbers of youngsters began to receive additional years of service. At Fox, for example, the school is ungraded and most of the HH100 youngsters automatically receive two years of service. Quirk Middle School on the other hand is graded yet two years is the general rule. In the high schools, substantial numbers of youngsters were in their third year of service, particularly at HPHS - 9 and at WHS - 9 since both teams are fed from the city's two middle schools. Even so, the HH100 proposal does not mention this modification in services even though the pattern has persisted for some years.

For the 1978-79 school year, reported enrollment patterns were as follows.

TABLE 11

Analysis of Enrollments by Year, 1978 - 1979

Team	1st Year	2nd Year	3rd Year	Other
HPHS-10	64	25		
HPHS-9	43	11	31	
WHS-9	52	3	44	2
BHS-9	82			
Fox 7/8D	54	41		
Fox 7/8P	58	36		
Quirk-7	87			
Quirk-8	18	75		
Program Total	62.7%	26.1	10.3	-

Because multiple service years seems to be the rule rather than the exception, it is strongly recommended that the Higher Horizons proposal attend to this issue for the coming year. The proposal should delineate the number or range of years of service contemplated and list program and student criteria for continuation as well as for acceptance into the program. Given this information, the specified percentile criterion can be applied to all youngsters and program eligibility ascertained.

A second concern is the reporting of pupil eligibility. Once eligibility requirements have been clarified it should be possible to obtain this information for all HH100 students and at an early point in time. While it is hoped that eligibility reporting can be tied into Hartford's computer imput system so as to eliminate the laborious copying of data, in any event, spring eligibility data is available for a majority of the youngsters.

While a review of eligibility forms does indicate compliance with the guidelines, problems in collecting the forms, in ascertaining their correctness and completeness, and in receiving corrected information created a number of problems this year. Hopefully this situation will be corrected.

Another program deviation resulted from student attrition. In order to insure that teams could service the targeted number of 100 youngsters each, student loads ranging from 106 to 115 were typically scheduled. This "over-booking" took care of the problems resulting from fall "no-shows" and from transfers or drop-outs occurring during the course of the school year. Since the program was not set up to accommodate mid-term replacements, the result was

that the actual number of youngsters served by any team generally approximated the targeted 100. During 1978-79, however, numbers of youngsters enrolled in the fall when compared with those who were present at the end of the year showed substantial reductions; only 97% of the 800 targeted youngsters were enrolled while only 88% completed the year in the program. Whether the problem was a recurrent one was not ascertained. Even so, the issue of service and of enrollment should receive careful scrutiny for the coming year.

Beginning and end-of-year enrollments are reported by team in the table which follows:

TABLE 12

Comparison of Actual and Target Enrollments by Team,
Fall 1978 - Spring 1979

Team	Fall	% of Target	Spring	% of Target	% of Fall
HPHS - 9	94	94%	84	84%	89%
HPHS - 10	97	97%	87	87%	90
WHS - 9	98	98%	87	87%	89
BHS - 9	102	102%	80	80%	78
Fox - 7/8D	97	97%	97	97%	100%
Fox - 7/8P	98	98%	97	97%	99%
Quirk - 7	95	95%	86	86%	91%
Quirk - 8	97	97%	92	92%	95%
Total	97.3	97.3%	88.8	88.8%	87.8%

3. Were there other evidences of success which could be built upon?

Since HH100 was listed in the USOE publication, Educational Programs That Work as one of the relatively few successful secondary school reading programs, it can be anticipated that interest in replicating HH100 will continue during the coming year. Based on some preliminary recommendations from this office, the funding office prepared and submitted a proposal for submission to USOE to receive support for the HH100 dissemination effort. If funded, HH100 would have the capability to spread the word about the program, to assist other districts to replicate HH100, and from an evaluative standpoint, to collect data for comparative studies and assessments. With a broader base for data collection program modifications, refinements in the evaluation design, and possibly even the development of procedures to further facilitate HH100 replications not only to underachieving secondary school populations but with other populations as well seem possible. At the very least, the replication issue should be considered because of the efficacy of the HH100 program to date.

Additionally, by refining the evaluation design, which will be covered in more detail in the recommendations section of this report, it should be possible to examine more closely student changes attributed to the HH100 process, to look at gains on a longitudinal basis, and perhaps even to set up a methodology to follow youngsters once they leave the HH100 team. After all, since success in post secondary education, in work, and in life is the ultimate goal of the program. Longitudinal assessments in this area not only for HH100 but for other secondary school programs, should be of prime concern.

Summary of Findings

Because of the length of this evaluation and the amount of data which have been presented, it seems appropriate to summarize the findings which have been reported so far.

With respect to student improvements in the reading and mathematics skill levels, in all instances achievement test gains were statistically significant with all but one subtest gain for one team exceeding the .01 level. The same test scores produced percentile gains ranging from 5 to 36 points. These gains substantially exceeded the 2 point gain level which had been projected. When fall pre test scores were compared with the previous spring testing, and with the post test MAT scores, gain levels were comparable although in several instances limited data had been presented.

In all eight teams students achieved a better percentage of attendance than that of their host school and grade level. Gains above the target level ranged from 3.2 to a high of 16.9 percentage points. While it was impossible to determine whether these students had acquired more realistic and positive attitudes towards themselves and towards the school, self-reporting data seemed extremely salutary thus indicating that positive attitudes were present.

Other less obvious evidences of success were also reported. Since HH100 is one of the few secondary school validated reading programs, efforts are being made to secure funding so as to provide dissemination services. If funded, these services will not only provide other districts with HH100 information but should also serve as a vehicle for the collection of a broader base of project

information as well.

While HH100 operated substantially in accord with the funding proposal several areas of concern were in evidence. Issues regarding aide and counselor assignments, the need to clarify student eligibility requirements, and eligibility reporting require resolution. The clarification of questions regarding multiple years of service and enrollment utilization and attrition are also needed although a majority of these problems seem amenable to resolution.

Recommendations

From even the most salutary of program evaluations, recommendations are usually in order and HH100 is no exception to this rule. While many of these recommendations have been discussed at length in the narrative, a concise presentation is in order.

1. Because HH100 has demonstrated over the years that it can produce substantial test score improvement using both statistical and relative percentile point gain criteria, the program's capability in this area is not in question. What is needed is a systematic longitudinal program evaluation. While team members have often requested this activity until now any kind of systematic follow-up was virtually impossible. With the advent of the Board's new computer system which will eventually contain student city-wide test scores, it should be possible to look at HH100 youngsters as they progress through the school system and assess their growth in terms of reading and mathematics test score gains. This is, of course, recommended. In any longitudinal assessment, other indicators of success or of potential

problem areas should be considered; academic grades, attendance patterns, and possibly other variables might be pumped into the data base. If relevant, these might provide added insight into future patterns of gain both within the school system and following graduation. While it will probably not be possible to look at post graduation factors immediately, this area of inquiry should be considered for possible implementation during a succeeding project year, with a feasibility assessment together with potential resource allocations and costs projected to some degree.

2. How much is too much testing? Based on the obvious similarity between spring and succeeding fall MAT test results, a question must be raised about the fall testing; is it really necessary? If the reason for this testing is based on the need to provide up to date test scores for evaluation purposes, for establishing student eligibility for compensatory services, and for locating a basic instructional level upon which to build through individual student diagnosis or prescription than it may well be that the spring MAT test meets all of the various criteria. If, on the other hand it is argued that the tests are needed for diagnostic purposes than the overall pattern of testing requires some reassessment. In any event the use of spring rather than fall MAT scores should certainly be considered.

3. On the average, HH100 student attendance was predictably higher than the established goal. This is a typical HH100 accomplishment and should be expected given the emphasis which is placed on

attendance by the staff. A sliding scale should also be continued since one attendance standard might penalize a team which is hosted by a school where good attendance is stressed. The actual standards require reassessment. Should the desired levels of attendance be increased; should the comparisons be compared with a student's previous pattern of attendance rather than with the host school; or should host school attendance be used as the criterion for the first year of service and the student's pattern used as the standard in subsequent program years? While the performance of the youngsters was salutary, the standards seem less than realistic and should be reassessed.

4. Measuring affective change is at best a tenuous business; yet it is important enough to HH100 so that at least an attempt should be made. HH100 has traditionally used a Pupil Rating Form (PRF) administered at the end of each year to determine whether the objective, ... that the student ... will acquire a more realistic and positive attitude ... has been achieved. This raises a technical question. If the objective is to contemplate a comparative assessment, than a logical solution would be to administer the PRF in the fall, perhaps use it for discussion purposes or for group counseling, and readminister the same instrument in the spring. While paired scores are preferable, if respondent anonymity is needed scores can be analyzed for the teams as a whole.

A second way to gain more usable information is to refine the open-

ended PRF questions which ask how HH100 provided the most and least help and what was liked best and least. To cut down on the wide variety of responses encountered a structured check point format might be used to classify most of the responses while open-ended statements could still be used to collect the "odd ball" response. In this way, evaluator judgment would be replaced to a large extent by objective classification which might in turn provide more valid and reliable information over the years to come. Trying to figure out what a student meant by "Mickey Mouse watches" while interesting, did not provide information which was particularly beneficial to the program. Hence, the recommended improvements.

A third change to the PRF should consider adding one more open-ended dimension. Presently, the PRF asks what made various differences; perhaps it would be equally valuable to ask "why?" At least, it should be considered.

5. Staffing recommendations have already been suggested. The two paraprofessional positions should be filled using positions allocated to the program. Should there be unforeseen staffing difficulties, these should be resolved immediately, if necessary with the support of school and central office administration. If the positions are not filled or needed, funds should be shifted elsewhere.

6. By law and by regulation, compensatory staff can provide only limited services to non-eligible compensatory students. While the law allows a 10% leeway in the service area, it also requires that the

staff member who is funded actually provide the services, even if these services can be provided by other resources as well. Thus, assignments and responsibilities should be clarified immediately or at least a plan and time frame set for problem resolution.

7. With respect to the issue of student enrollment and attrition, several recommendations are indicated.

   - Each team should select from 106 to 115 eligible candidates, process them into various teams, and allow normal attrition to reduce the numbers to the target level of 100. Past experience has shown that a limited amount of "over-booking" is not detrimental to the program; conversely, neither is there evidence that "under-booking" increases the quality of instructional services although it certainly reduces the number of available student slots.
   - The feasibility of establishing a district-wide pool of eligible HH100 applicants and of inter-district enrollments might be considered, and particularly in instances where one or more teams are experiencing recruitment problems.
   - The issue of full enrollment should continue to be a focus of ensuing year evaluations with strategies, problem areas, and solutions recorded and reported.
   - The 1979-80 HH100 proposal should clearly describe the mult-year nature of the Higher Horizons program, requirements for program entry, and requirements for continuation during

sequential school years. These should be spelled out in detail and made a part of the record. Student eligibility data should be accurately recorded not only to meet program guidelines but as a basis for longitudinal program assessments as well.

8. Hartford can take pride in the fact that Higher Horizons has again been included in Educational Programs That Work. Should the project be funded as a program worthy of replication, attention should not only be given to the dissemination of project information (which would of course be good for Hartford) but to the collection of a broader base of data as well. Common data collected from various sites might make it possible to further refine the program, to improve it, and perhaps even to develop methodologies which would work with other populations. If Hartford has the opportunity for replication, the collection and analysis of outside data should certainly be considered.

Robert J. Nearine
Evaluation Office
July 20, 1979
.-.-.

1978-79 COMPENSATORY PROJECT EVALUATION REPORTING FORM

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State Office Bldg., Rm. 375
P.O. Box 2219
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School District Hartford 64

District Address 249 High St., Htfd., Ct 06103 (1-3)

Project Title Higher Horizons 100

Director John Shea (John DiBenedetto, Team Liaison) (5-6)
(Name) (Telephone)

Evaluator Robert J. Nearine 566-6074 (8-9)
(Name) (Telephone)

Program Site(s) HPHS, WHS, RHS, QMS and FMS (11-12)

Funds supporting this component:

Title I:	341,676	(14-20)
SADC public:		(22-27)
SADC non-public:		(29-34)
Other (specify):		(36-42)
TOTAL:	341,676	

Expenditures included in Total above which supported services to private school children: N/A (44-49)/

Unduplicated count of program participants by grade levels:

PUBLIC SCHOOL

PK	K	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
(8-10)	(12-14)	(16-18)	(20-22)	(24-26)	(28-30)	(32-34)	(36-38)	186 (40-42)	193 (44-46)	294 (48-50)	98 (52-54)	(56-58)	(60-62)/	771

PRIVATE SCHOOL

PK	K	1	2	3	4	5	6	7	8	9	10	11	12	TOTALS
X	(12-14)	(16-18)	(20-22)	(24-26)	(28-30)	(32-34)	(36-38)	(40-42)	(44-46)	(48-50)	(52-54)	(56-58)	(60-62)/	

Number and full-time equivalent of project staff paid by compensatory funds:

	Instructional		Other Professional			Clerical or Other		
	No.	f.t.e.	(Specify)	No.	f.t.e.	(Specify)	No.	f.t.e.
Teachers	9 (8-9)	9 (11-16)	Counselor	4	4			
Aides	8* (18-19)	8* (21-26)						
				(28-29)	(31-36)		(38-39)	(41-46)

36

*2 positions remained unfilled during a portion of the year

Using this page: 1) state each performance objective of this component (from the Application); 2) specify the measure(s) used to evaluate each objective; 3) indicate the method of analysis applied to the data collected with each instrument; 4) present results of the evaluation (extent to which objectives were reached).

PERFORMANCE OBJECTIVES	DATES INSTRUMENTS/ADMINISTERED	TREATMENT OF DATA INCLUDING TESTS FOR SIGNIFICANCE	RESULTS
1. Students...will demonstrate an improvement in...NCE scores above that which would be expected [a gain of 7%ile points or more] ...in reading and mathematics [using the CTBS or MAT].	MAT - Sept./May CTBS - Sept./May	t-test .05: analysis of percentile changes	All gains except for the CTBS PS subtest were significant at the .01 level; the CTBS PS reached .05. Percentile gains ranged from 5 to 36 points. (See pages 6-10)
2. Students...will achieve...a better percentage of attendance... than that of the whole school.	Attendance figures by team	Comparison of mean team attendance with host school attendance criteria, 77-78 and Jan. 79	In all cases team attendance gains exceeded host school standards. (See page 15)
3. Students...will acquire a more realistic and positive attitude toward themselves and school...	Pupil Rating Form, May 1979	Analysis of responses	While realistic and positive attitudes were reported, no comparitive data were submitted.(See pages 18 - 20)

RECOMMENDATIONS - Outline your recommendations for this program based on an analysis of the results.

See page 26

School District Hartford 64 Component Title Higher Horizons 100 Page 3

Use this page to report normed test information. Present average standard (scaled) scores by grade level for each test/subtest analyzed. For instruments which provide only raw scores, present mean raw scores in the columns labeled "$\bar{x}$ standard scores" and label as raw scores . Do not submit any scores in grade-equivalent units.

In providing percentiles associated with mean pre/post scores, either national or other norms may be used. Please indicate what norms have been employed. If publisher's manual is consulted (national norms), be sure to consult tables which correspond to pupils' actual grade placement. (If pupils were tested out-of-level, you may need to consult manuals for test levels other than the level administered.)

X national norms
[] other norms (specify) _____

Grade Level	No. Of Pupils Pre/Post Tested	Test Instrument Information: Name of Test	Edition (Year)	Name of Subtest	Pre/Post Battery Level	Pre/Post Form	Month of Pre/Post Tests	Standard Scores: Pre Test $\bar{x}$ S.S.	Post Test $\bar{x}$ S.S.	Associated Percentiles *: % tile Pre	% tile Post	CSDE USE ONLY
HPHS-9	81	MAT	1970	WK	ADV / ADV	H / H	SEP / MAY	84.6	87.8	22	30	
WHS-9	83	MAT	1970	WK	ADV / ADV	H / H	SEP / MAY	83.1	85.6	20	26	
BHS-9	79	MAT	1970	WK	ADV / ADV	H / H	SEP / MAY	79.4	95.8	14	50	
FOX 7/8	84	MAT	1970	WK	ADV / ADV	H / H	SEP / MAY	75.9	81.4	16	24	
FOX 7/8	85	MAT	1970	WK	ADV / ADV	H / H	SEP / MAY	75.8	81.4	16	24	
QUIRK 7	78	MAT	1970	WK	INT / INT	H / H	SEP / MAY	72.6	80.7	18	38	
QUIRK 8	93	MAT	1970	WK	ADV / ADV	H / H	SEP / MAY	80.2	87.0	22	34	
(1-2)	(4-6)									(8-9)	(11-12)	(14-28)

*Advanced - beginning of grade 9, only
Intermediate - beginning and end of grade 6

School District Hartford 64 Component Title Higher Horizons 100

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[ ] other norms (specify) _____

Grade Level	No. Of Pupils Pre/Post Tested	Test Instrument Information: Name of Test	Edition (Year)	Name of Subtest	Pre/Post Battery Level	Pre/Post Form	Month of Pre/Post Tests	Standard Scores: Pre Test $\bar{x}$ S.S.	Standard Scores: Post Test $\bar{x}$ S.S.	Associated Percentiles *: % tile Pre	Associated Percentiles *: % tile Post	CSDE USE ONLY
HPHS-9	81	MAT	1970	RD	ADV / ADV	H / H	SEP / MAY	83.7	93.6	22	40	
WHS-9	83	MAT	1970	RD	ADV / ADV	H / H	SEP / MAY	85.2	90.1	24	34	
BHS-9	79	MAT	1970	RD	ADV / ADV	H / H	SEP / MAY	81.8	86.9	20	26	
FOX 7/8	84	MAT	1970	RD	ADV / ADV	H / H	SEP / MAY	75.6	82.3	16	24	
FOX 7/8	85	MAT	1970	RD	ADV / ADV	H / H	SEP / MAY	73.9	83.8	14	26	
QUIRK 7	78	MAT	1970	RD	INT / INT	H / H	SEP / MAY	77.1	82.7	26	40	
QUIRK 8	93	MAT	1970	RD	ADV / ADV	H / H	SEP / MAY	83.3	90.0	26	40	
(1-2)	(4-6)									(8-9)	(11-12)	(14-28)

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School District Hartford 64 Component Title Higher Horizons 100 Page 3

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[X] national norms
[ ] other norms (specify) _____

Grade Level	No. of Pupils (Pre/Post Tested)	Test Instrument Information: Name of Test	Edition (Year)	Name of Subtest	Pre/Post Battery Level	Pre/Post Form	Month of Pre/Post Tests	Standard Scores: Pre Test $\bar{x}$ S.S.	Standard Scores: Post Test $\bar{x}$ S.S.	Associated Percentiles *: % tile Pre	Associated Percentiles *: % tile Post	CSDE USE ONLY
HPHS-9	81	MAT	1970	AC	ADV / ADV	H / H	SEP / MAY	96.9	101.0	22	36	
WHS-9	83	MAT	1970	AC	ADV / ADV	H / H	SEP / MAY	96.4	99.3	22	30	
BHS-9	79	MAT	1970	AC	ADV / ADV	H / H	SEP / MAY	96.2	99.3	22	30	
FOX 7/8	85	MAT	1970	AC	ADV / ADV	H / H	SEP / MAY	88.0	96.5	16	36	
FOX 7/8	85	MAT	1970	AC	ADV / ADV	H / H	SEP / MAY	87.9	94.3	16	28	
QUIRK 7	76	MAT	1970	AC	INT / INT	H / H	SEP / MAY	85.6	93.9	40	64	
QUIRK 8	93	MAT	1970	AC	ADV / ADV	H / H	SEP / MAY	94.3	104.7	28	62	
(1-2)	(4-6)									(8-9)	(11-12)	(14-28)

*Advanced - beginning of grade 9, only
Intermediate - beginning and end of grade 6

School District Hartford 64 Component Title Higher Horizons 100 Page 3

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X national norms
[] other norms (specify) _____

Grade Level	No. Of Pupils Pre/Post Tested	Test Instrument Information: Name of Test	Edition (Year)	Name of Subtest	Pre/Post Battery Level	Pre/Post Form	Month of Pre/Post Tests	Standard Scores: Pre Test $\bar{x}$ S.S.	Standard Scores: Post Test $\bar{x}$ S.S.	Associated Percentiles *: % tile Pre	Associated Percentiles *: % tile Post	CSDE USE ONLY
HPHS-9	80	MAT	1970	PS	ADV / ADV	H / H	SEP / MAY	90.0	96.0	16	28	
WHS-9	83	MAT	1970	PS	ADV / ADV	H / H	SEP / MAY	82.7	93.9	10	22	
BHS-9	79	MAT	1970	PS	ADV / ADV	H / H	SEP / MAY	88.2	92.9	14	22	
FOX 7/8	85	MAT	1970	PS	ADV / ADV	H / H	SEP / MAY	82.0	86.6	14	20	
FOX 7/8	85	MAT	1970	PS	ADV / ADV	H / H	SEP / MAY	82.8	87.8	14	20	
QUIRK 7	76	MAT	1970	PS	INT / INT	H / H	SEP / MAY	81.5	86.7	30	44	
QUIRK 8	93	MAT	1970	PS	ADV / ADV	H / H	SEP / MAY	90.1	97.3	26	38	
(1-2)	(4-6)									(8-9)	(11-12)	(14-28)

*Advanced - beginning of grade 9, only
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School District Hartford 64 Component Title Higher Horizons 100

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X national norms
|| other norms
(specify) _____

Grade Level	No. Of Pupils Pre/Post Tested	Test Instrument Information: Name of Test	Edition (Year)	Name of Subtest	Pre/Post Battery Level	Pre/Post Form	Month of Pre/Post Tests	Standard Scores: Pre Test $\bar{X}$ S.S.	Standard Scores: Post Test $\bar{X}$ S.S.	Associated Percentiles: % tile Pre	Associated Percentiles: % tile Post	CSDE USE ONLY
HPHS 10	68	CTBS	1973	WK	4 / 4	S / S	MAY / SEP	496.9	559.6	19	28	
HPHS 10	68	CTBS	1973	RD	4 / 4	S / S	MAY / SEP	501.2	553.7	22	29	
HPHS 10	67	CTBS	1973	AC	4 / 4	S / S	MAY / SEP	506.2	561.2	29	44	
HPHS 10	67	CTBS	1973	PS	4 / 4	S / S	MAY / SEP	498.2	534.8	11	16	

48 (1-2) (4-6) (8-9) (11-12) (14-28)